SYSTEM PROVISIONING AND CONFIGURATION MANAGEMENT

LAB FILE

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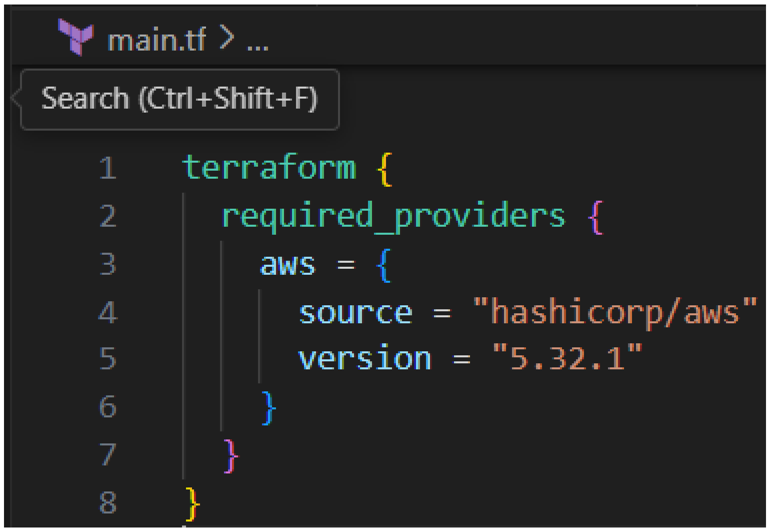
EXPERIMENT 4:

Terraform Variables

1. Create a file named main.tf within your project directory.

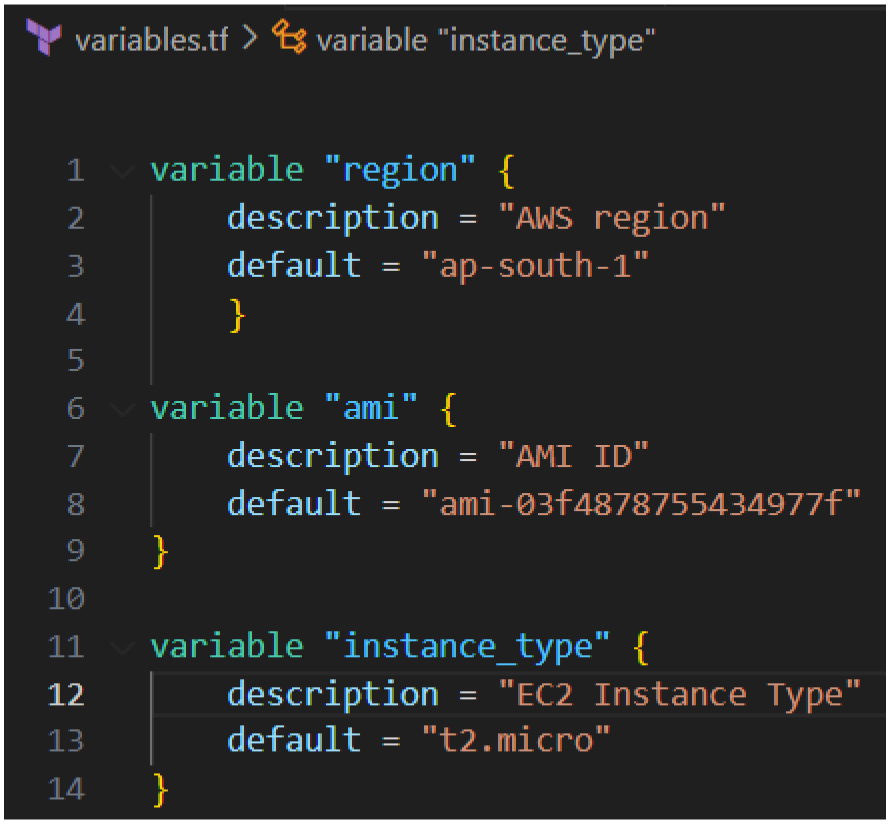


main.tf > ...

Search (Ctrl+Shift+F)

```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.32.1"
    }
  }
}
```

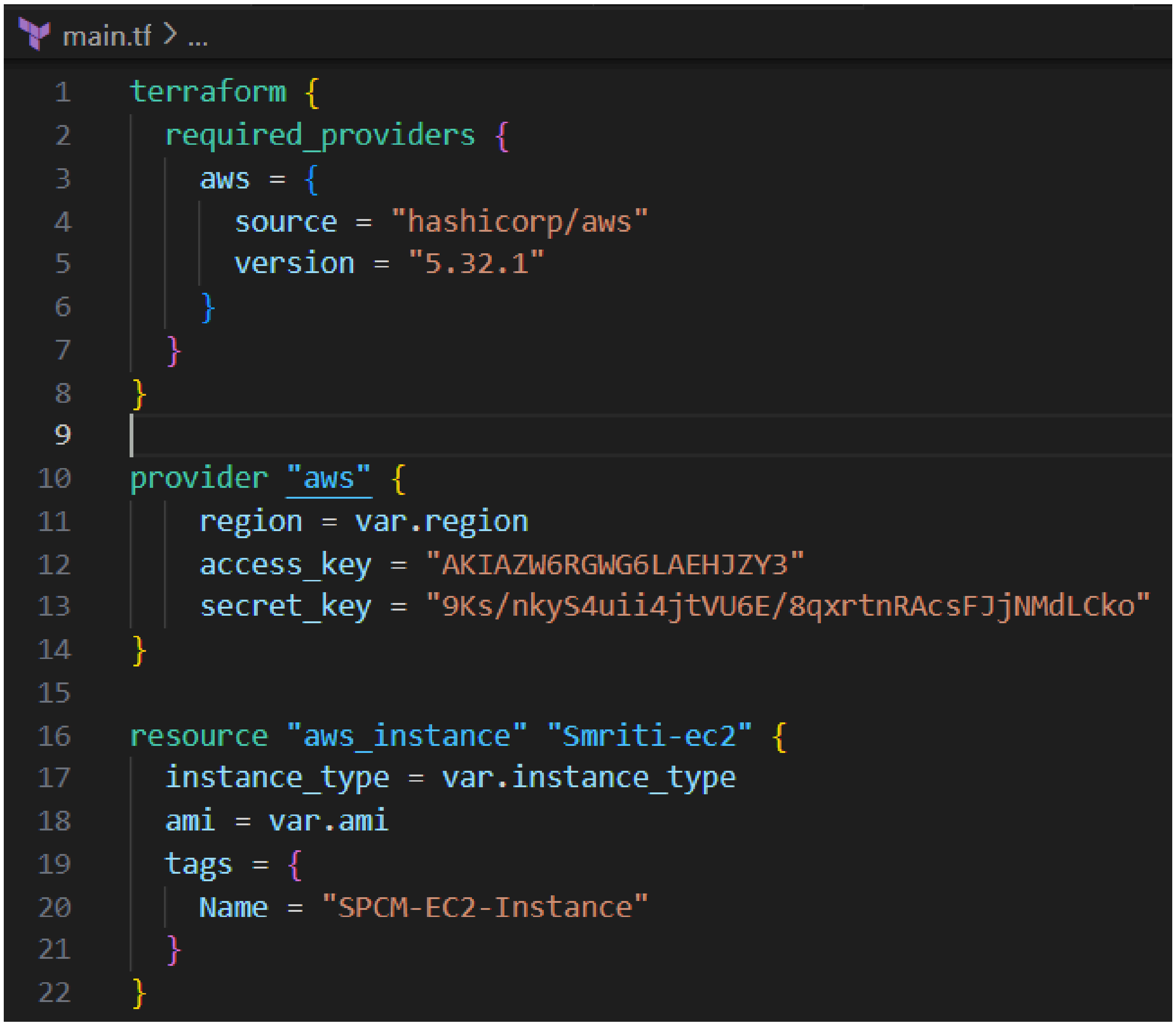
2. Make a new file named variable.tf. Define variables for region, ami, and instance_type.



variables.tf > variable "instance_type"

```
variable "region" {
    description = "AWS region"
    default = "ap-south-1"
    }

variable "ami" {
    description = "AMI ID"
    default = "ami-03f4878755434977f"
}

variable "instance_type" {
    description = "EC2 Instance Type"
    default = "t2.micro"
}
```

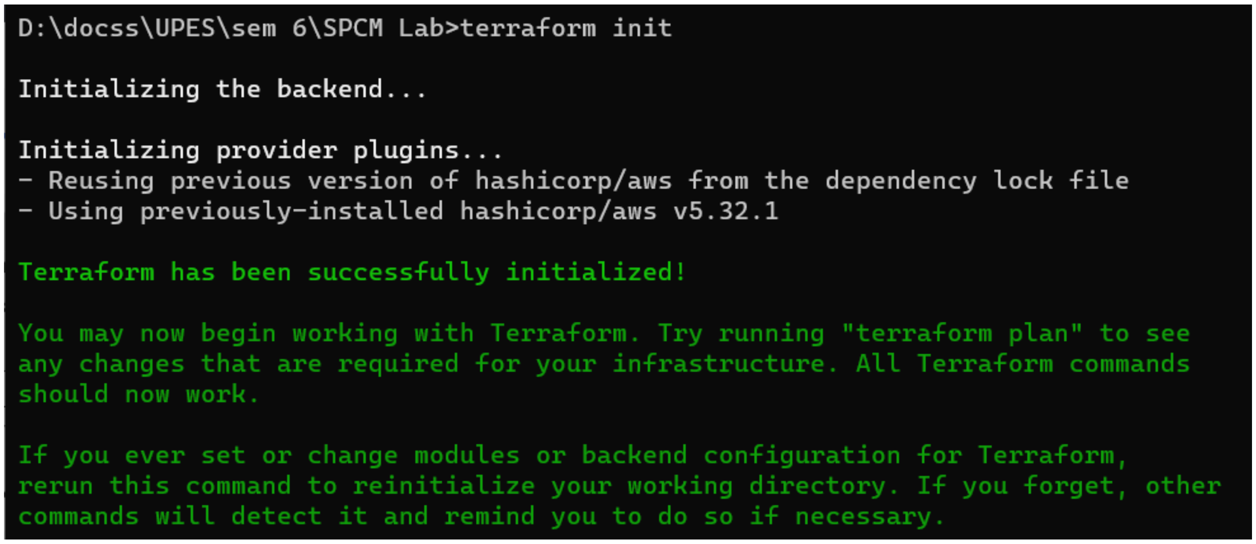
3. Modify main.tf to use the variables.



main.tf > ...

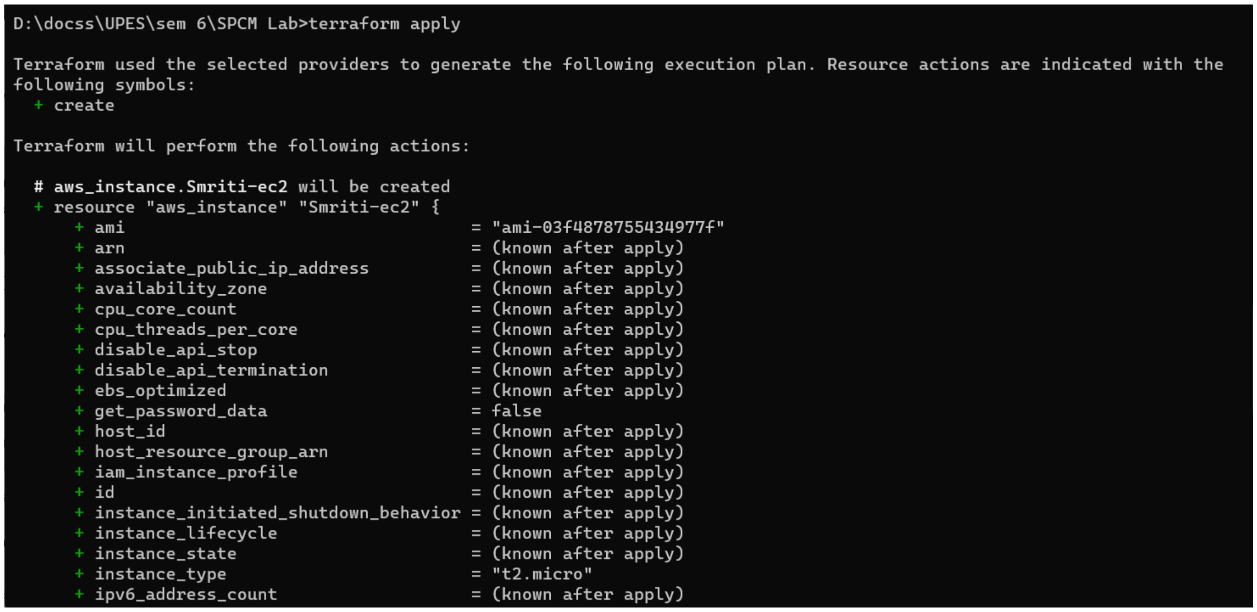
```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.32.1"
    }
  }
}

provider "aws" {
    region = var.region
    access_key = "AKIAZW6RGWG6LAEHJZY3"
    secret_key = "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"
}

resource "aws_instance" "Smriti-ec2" {
  instance_type = var.instance_type
  ami = var.ami
  tags = {
    Name = "SPCM-EC2-Instance"
  }
}
```

4. Use the command - terraform init.



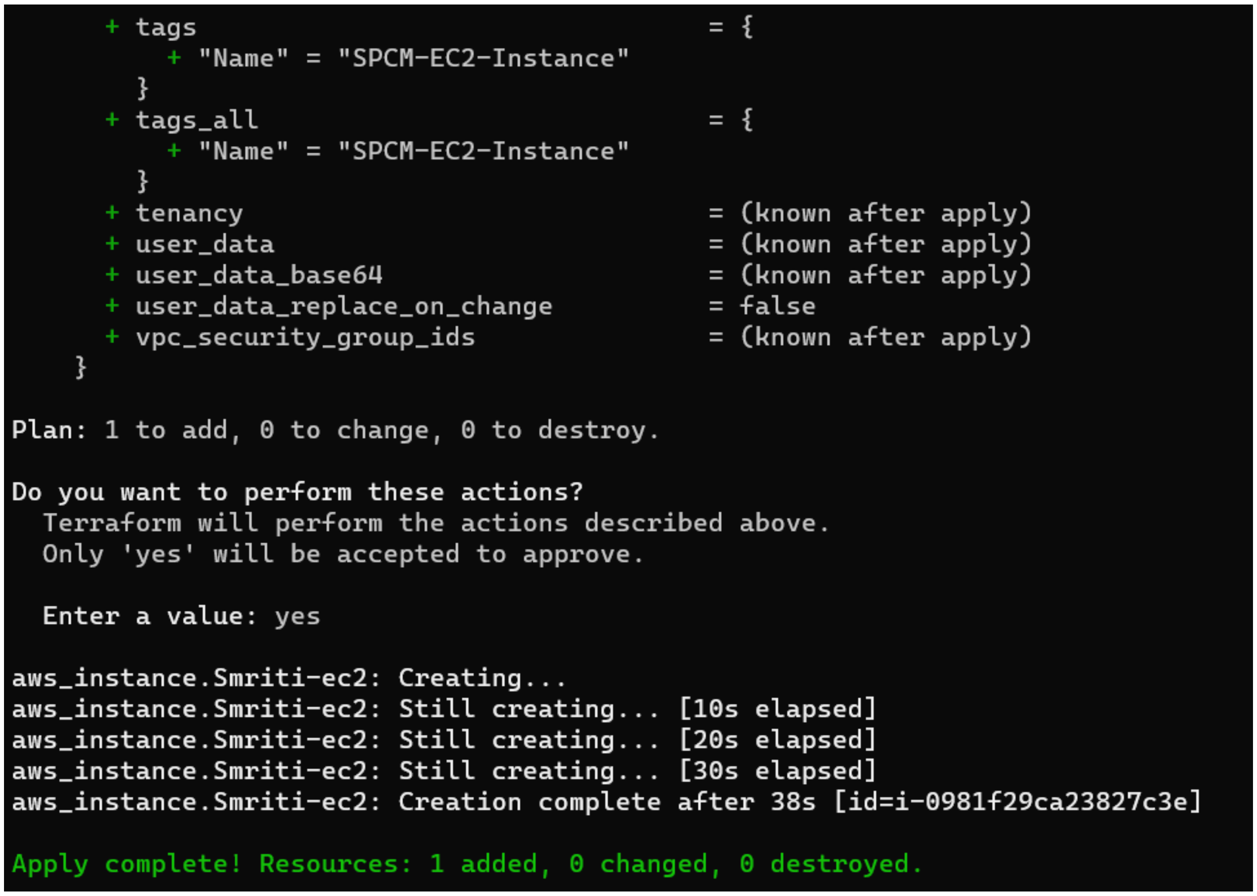
```
D:\docss\UPES\sem 6\SPCM Lab>terraform init

Initializing the backend...

Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v5.32.1

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
```

5. Now use the command - terraform apply.



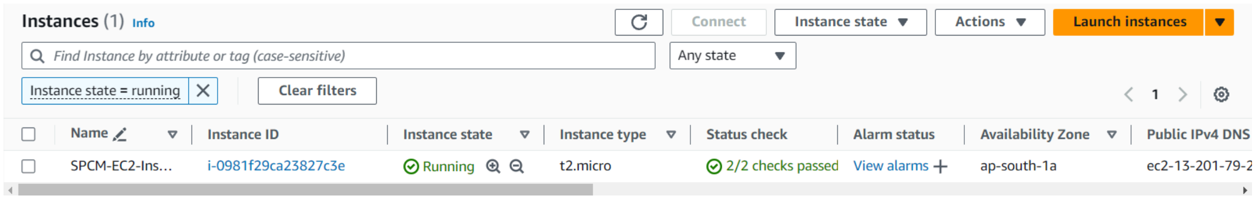
```
D:\docss\UPES\sem 6\SPCM Lab>terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the
following symbols:
  + create

Terraform will perform the following actions:

  # aws_instance.Smriti-ec2 will be created
  + resource "aws_instance" "Smriti-ec2" {
      + ami                                  = "ami-03f4878755434977f"
      + arn                                  = (known after apply)
      + associate_public_ip_address          = (known after apply)
      + availability_zone                    = (known after apply)
      + cpu_core_count                       = (known after apply)
      + cpu_threads_per_core                 = (known after apply)
      + disable_api_stop                     = (known after apply)
      + disable_api_termination              = (known after apply)
      + ebs_optimized                        = (known after apply)
      + get_password_data                    = false
      + host_id                              = (known after apply)
      + host_resource_group_arn              = (known after apply)
      + iam_instance_profile                 = (known after apply)
      + id                                   = (known after apply)
      + instance_initiated_shutdown_behavior = (known after apply)
      + instance_lifecycle                   = (known after apply)
      + instance_state                       = (known after apply)
      + instance_type                        = "t2.micro"
      + ipv6_address_count                   = (known after apply)
```

6.



```
      + tags                                 = {
          + "Name" = "SPCM-EC2-Instance"
        }
      + tags_all                             = {
          + "Name" = "SPCM-EC2-Instance"
        }
      + tenancy                              = (known after apply)
      + user_data                            = (known after apply)
      + user_data_base64                     = (known after apply)
      + user_data_replace_on_change          = false
      + vpc_security_group_ids               = (known after apply)
    }

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

aws_instance.Smriti-ec2: Creating...
aws_instance.Smriti-ec2: Still creating... [10s elapsed]
aws_instance.Smriti-ec2: Still creating... [20s elapsed]
aws_instance.Smriti-ec2: Still creating... [30s elapsed]
aws_instance.Smriti-ec2: Creation complete after 38s [id=i-0981f29ca23827c3e]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
```

7. Check if the instance was created.

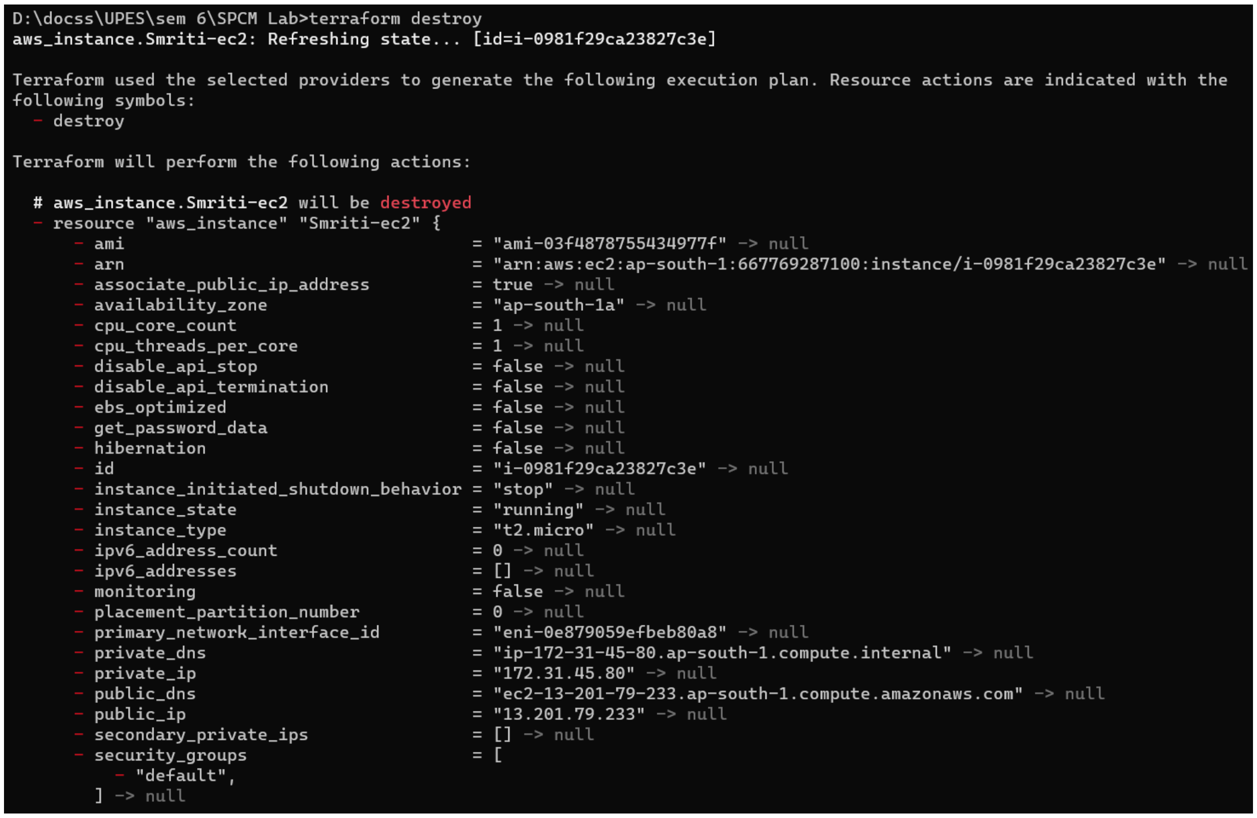


Instances (1) Info

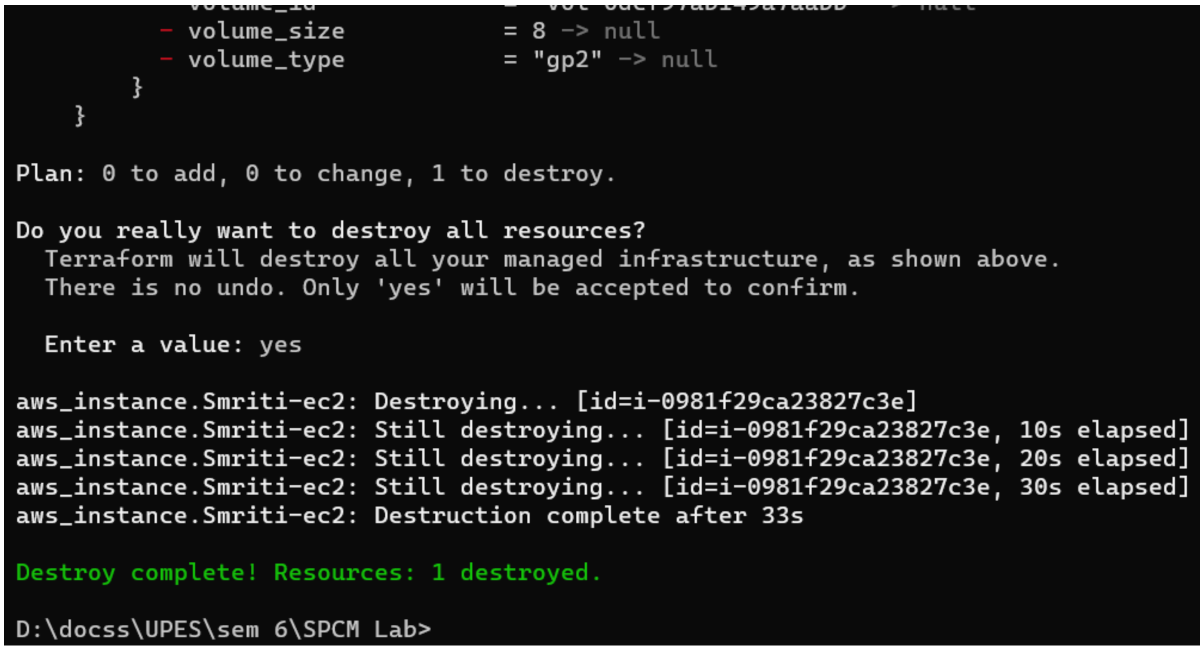
Instance state = running

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
	SPCM-EC2-Ins…	i-0981f29ca23827c3e	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1a	ec2-13-201-79-2

8. After checking, you can clean up resources.



```
D:\docss\UPES\sem 6\SPCM Lab>terraform destroy
aws_instance.Smriti-ec2: Refreshing state... [id=i-0981f29ca23827c3e]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the
following symbols:
  - destroy

Terraform will perform the following actions:

  # aws_instance.Smriti-ec2 will be destroyed
  - resource "aws_instance" "Smriti-ec2" {
      - ami                                  = "ami-03f4878755434977f" -> null
      - arn                                  = "arn:aws:ec2:ap-south-1:667769287100:instance/i-0981f29ca23827c3e" -> null
      - associate_public_ip_address          = true -> null
      - availability_zone                    = "ap-south-1a" -> null
      - cpu_core_count                       = 1 -> null
      - cpu_threads_per_core                 = 1 -> null
      - disable_api_stop                     = false -> null
      - disable_api_termination              = false -> null
      - ebs_optimized                        = false -> null
      - get_password_data                    = false -> null
      - hibernation                          = false -> null
      - id                                   = "i-0981f29ca23827c3e" -> null
      - instance_initiated_shutdown_behavior = "stop" -> null
      - instance_state                       = "running" -> null
      - instance_type                        = "t2.micro" -> null
      - ipv6_address_count                   = 0 -> null
      - ipv6_addresses                       = [] -> null
      - monitoring                           = false -> null
      - placement_partition_number           = 0 -> null
      - primary_network_interface_id         = "eni-0e879059efbeb80a8" -> null
      - private_dns                          = "ip-172-31-45-80.ap-south-1.compute.internal" -> null
      - private_ip                           = "172.31.45.80" -> null
      - public_dns                           = "ec2-13-201-79-233.ap-south-1.compute.amazonaws.com" -> null
      - public_ip                            = "13.201.79.233" -> null
      - secondary_private_ips                = [] -> null
      - security_groups                      = [
          - "default",
        ] -> null
```



```
          - volume_size           = 8 -> null
          - volume_type           = "gp2" -> null
        }
    }

Plan: 0 to add, 0 to change, 1 to destroy.

Do you really want to destroy all resources?
  Terraform will destroy all your managed infrastructure, as shown above.
  There is no undo. Only 'yes' will be accepted to confirm.

  Enter a value: yes

aws_instance.Smriti-ec2: Destroying... [id=i-0981f29ca23827c3e]
aws_instance.Smriti-ec2: Still destroying... [id=i-0981f29ca23827c3e, 10s elapsed]
aws_instance.Smriti-ec2: Still destroying... [id=i-0981f29ca23827c3e, 20s elapsed]
aws_instance.Smriti-ec2: Still destroying... [id=i-0981f29ca23827c3e, 30s elapsed]
aws_instance.Smriti-ec2: Destruction complete after 33s

Destroy complete! Resources: 1 destroyed.

D:\docss\UPES\sem 6\SPCM Lab>
```